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ABSTRACT

Although a concern with population issues has gone out of fashion, the problems underlying that concern have not disappeared. Solving these problems would be facilitated by increased knowledge produced by scientists working directly on population issues. A study was conducted to explore patterns and correlates of research productivity of members (N=2,713) of the Population Association of America (PAA). Five measures of research productivity for the years 1981 to 1985 were examined: (1) number of presentations at PAA meetings; (2) number of times appeared as an author in the population journal "Demography"; (3) number of times served as editorial consultant for "Demography"; (4) number of publications listed in "Population Index"; and (5) number of times listed as principal investigator in the federal inventory of population research. The results revealed that the five criteria of research productivity were related to predictors, including demographic characteristics, educational and work background, and past productivity. Measures of research productivity were highly skewed. The best predictor of research productivity was previous productivity in the same area. Productivity was also associated with younger age, a research-oriented educational background, and perhaps a greater commitment to the population field. The results illustrate the usefulness of data from public records for research on the psychology of scientists. (Author/NB)

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Patterns and Correlates of Research Productivity in Population Scientists

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Abstract

Although a concern with population issues has gone out of fashion, the problems underlying that concern have not disappeared. Solving these problems would be facilitated by increased knowledge produced by scientists working directly on population issues. Accordingly, the present paper explores patterns and correlates of research productivity of members of the Population Association of America. Five criteria of research productivity were related to predictors including demographic characteristics, educational and work background, and past productivity. Measures of research productivity are highly skewed. The best predictor of research productivity is previous productivity in the same area. Productivity also is associated with younger age, a research oriented educational background, and perhaps a great commitment to the population field. The results illustrate the usefulness of data from public records for research on the psychology of scientists.

Patterns and Correlates of Research Productivity In Population Scientists

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Although a concern with population issues has gone out of fashion, the problems underlying that concern have not disappeared. Finding solutions to these problems would be facilitated by increased knowledge, and such knowledge is most likely to be produced by scientists working directly on population issues. Accordingly, the present paper explores patterns and correlates of research productivity of members of the Population Association of America (PAA). The study is part of a larger ongoing longitudinal study of the psychological characteristics, career patterns, specialized interests, and accomplishments of those population scientists listed in the 1980 edition of the PAA Directory (Population Association of America, 1980).

Five measures of research productivity for the years 1981 to 1985 were examined. These included:

1. Number of presentations at meetings of PAA.
2. Number of times appeared as author in the population journal Demography.
3. Number of times served as an editorial consultant for Demography.
4. Number of publications listed in Population Index.
5. Number of times listed as a Principal Investigator in the federal Inventory of population research (e.g, Public Health Service, 1986). A distinction was made between all projects and entirely new projects to control for overlapping projects in the predictive analyses reported below.

In general, all contributions were treated equally, and all scientists listed on multi-author articles received credit with no distinction being made between first

authors and their co-authors. However, the federal Inventory lists only the primary Principal Investigator for each project, and does not recognize Co-Principal Investigators.

Table 1 summarizes the score distributions on these five productivity measures.

Table 1

Score Distributions for Research Contribution of Population Association of America Members Between 1980 and 1985 (N=2713)

	Mean	S.D.	Median	Skewness
PAA Presentations	0.50	1.21	0.15	3.40
Demography Authorships	0.10	0.41	0.04	5.75
Demography Consultantships	0.55	1.56	0.12	3.86
Population Index Listings	1.99	3.88	0.45	3.52
Principal Investigator Listings				
a. All Projects	0.33	1.33	0.05	5.64
b. New Projects	0.22	0.99	0.04	6.36

These results are highly consistent with the typical pattern found in previous research on the productivity of scientists. The distributions are highly skewed, with the modal score on each measure being 0. In other words, about half of these scientists made no contribution to the population research literature between 1981 and 1985.

In these circumstances, it appeared that it would be useful to search for correlates that distinguish between population scientists who have made some contribution and those who have made none. Accordingly each of these five measures was transformed to a dichotomy with scores of 1 assigned to population scientists who had made at least one contribution on that criterion and scores of 0 to all other population scientists.

These dichotomized criteria were related to a set of predictors summarizing the demographic characteristics, educational background, work setting, personality type, and previous research productivity of these scientists. Demographic characteristics included gender (inferred from name), and age (estimated from year in which bachelor's degree was awarded). Educational background was assessed in terms of whether or not scientists held a Ph.D. or similar research degree. Because research traditionally is performed in academic institutions, work setting was classified in terms of whether or not the scientist's 1980 address was or was not (a) academic, (b) population related, and (c) located in the United States. Personality type was assessed in terms of the typology derived from Holland's (1973) theory of occupational choices and careers. The personality code for each individual scientist was computed by averaging the codes for that scientist's undergraduate major field, field of highest degree, and 1980 occupation. The Investigative type in Holland's scheme has the strongest theoretical relationship to research productivity. Therefore, scientists whose personality code had Investigative as the first or second highest scale in their three-scale code were contrasted with other scientists. Also, those individuals specifically identified as Demographers in 1980 were contrasted with other population scientists. Previous productivity was assessed by whether or not the scientist had contributed in the same specific area in the years 1979-80.

Table 2 summarizes the zero-order correlations (Phi coefficients) between each (dichotomized) predictor and each measure of productivity. All of the predictor data apply to 1980 or earlier, so these correlations involve genuine predictive relationships. Most of these correlations are low, but because the number of cases is large many reach standard criteria for statistical significance.

The correlations generally are consistent with past research on the prediction of achievement (Munday & Davis, 1974; Richards, Holland & Lutz 1967) in that the

best predicator of future productivity is past productivity in the same area. High productivity also is associated with a research oriented educational background and work setting. Younger scientists tend to be more productive, and a greater professional commitment to population seems to be associated with greater research productivity. The results provide some support for the prediction of Holland's theory that an Investigative orientation will be associated with high productivity. Male gender appears to be more associated with criteria involving some degree of public recognition than with criteria involving simple productivity.

Table 2

Zero-Order Correlations Between Characteristics of PAA Members and Their Research Contributions (N=2098)

	Contributions in 1981-85					
	Presented at PAA	Demography Author	Demography Consultant	Listed in Population Index	Served as Grant P I	
					All	New
Male	.00	.04	.11**	.00	.08**	.07**
Born Before 1940	-.07**	-.05*	-.02	-.06**	.05*	.02
Held Ph.D. in 1980	.16**	.12*	.22**	.15**	.16**	.12**
1980 Address Was:						
Academic	.08**	.08**	.11**	.10**	.09**	.07**
Population Related	.15**	.07**	.08**	.23**	.05*	.06**
In the United States	.08**	.08**	.13**	-.11**	.13**	.12**
1st or 2nd Scale in Holland Code is INVESTIGATIVE	.11**	.07**	.11**	.13**	.05*	.04
1980 Occupation Was Demographer	.13**	.07**	.07**	.20**	.04	.05*
Contributed in Same Specific Area in 1979-80	.39**	.27**	.39**	.41**	.55**	.38**

*p <.05 **p <.01

A multi-variate analysis was computed in to order to study the impact of each predictor net of the other predictors. Results generally confirm the zero-order pattern, and in particular confirm that the strongest predictor of future productivity is past productivity. When the other variables are taken into account, however, an Investigative orientation no longer is associated with higher productivity. Therefore, the overall results only partially support Holland's theory.

These results illustrate the potential usefulness of archival data for research on the psychology of scientists. The data were restricted to those that could be obtained from public records, yet these data provided a fairly comprehensive assessment both of the demographic and psychological characteristics of population scientists and of their research contributions. Moreover, the analyses minimized some of the problems of response rate and other biases associated with reactive measures of the characteristics of scientists. Similar directory data are available for many disciplines, and public records of research productivity are available for all, or almost all, disciplines.

References

Holland, J.L. (1973) Making vocational choices: A theory of careers. Englewood Cliff, N.J.: Prentice-Hall.

Munday, L.A. & Davis, J.C. Varieties of accomplishment after college: Perspective on the meaning of academic talent. (ACT Research Report No. 51) Iowa City, IA: American College Testing Program.

Population Association of America. (1980) 1980 Directory of Members. Washington, DC: Author.

Public Health Service. Inventory and analysis of Federal population research: Fiscal year 1985. Washington, DC: U.S. Department of Health and Human Services.

Richards, J.M., Jr., Holland, J.L., & Lutz, S.W. (1967) Prediction of student accomplishment in college. Journal of Educational Psychology, 58, 343-355.